application. The specification, claims and drawings have been reviewed and minor editorial revisions made where seen to be appropriate. Claim 2 has been canceled and the salient recitations thereof included in claim 1 for clarification in regard to a meritorious effect of the invention. No new matter has been introduced into the application.

The indication of acceptance of the formal drawings is noted with appreciation as is the Examiner's acknowledgment of the claim for priority and receipt of the supporting certified copy of the priority document. Also, in this latter regard, while not the subject of any requirement or objection by the Examiner, the incorporation by reference of the prior foreign application (on which the claim for priority is based) has been deleted.

Claims 1 - 4, 6 - 9 and 11 have been rejected under 35 U.S.C. §102 as being anticipated by Meadowcroft; claims 5, 10, 12 and 14 have been rejected under 35 U.S.C. §103 as being unpatentable over Meadowcroft in view of Irie et al.; and claims 13 and 15 have been rejected under 35 U.S.C. §103 as being unpatentable over Meadowcroft in view of Kim et al. All of these grounds of rejection are respectfully traversed.

It is respectfully submitted that while Meadowcroft is directed to an optical module which is, in some ways, similar to the present invention, Meadowcroft significantly differs from the invention, as claimed, in regard to construction and form and does not teach or suggest the claimed subject matter which directly supports several meritorious effects of the invention. Specifically, the Examiner's attention is called to the fact that in claim 1, the "upper surface" of the cap of the semiconductor optical device is defined as being "formed with a window" and the connecting layer "directly" connects the upper surface

of the cap and the opened end face of the housing. Claims 9 and 10 (and 13 and 15) refer to the "semiconductor optical element of a cap sealing type" which is "to be aligned with an optical axis" and that the "upper surface of a cap is bonded to an end face of said housing". Thus, all independent claims in the application require a direct connection or bonding between surfaces which allows alignment to be performed to maximize light coupling and, at the same time, reduces the overall and, especially, lateral dimensions of the optical module. See, for example, page 2, line 20, to page 3, line 5, and page 3, line 25 to page 4, line 7. That is, by performing the bonding in the manner claimed between surfaces which are flat and substantially perpendicular to the optical axis of the optical module, optimized alignment of the optical axes of respective elements can be achieved during bonding since some lateral relative shifting of the housing and the semiconductor element is thus provided while reducing the lateral space required since bonding of other structure is not required on the sides of the semiconductor optical element as is characteristic Meadowcroft and Irie et al. while Kim et al. teaches a mechanical connection on the sides of the semiconductor optical element all of which requires an increase of lateral dimensions of the optical module while none of the references provide for relative shift of the housing and semiconductor optical element to achieve axial alignment. Further, none of the references applied teach or suggest holding an optical part (e.g. a lens) with the housing as recited in claims 1, 9 and 10.

Specifically, in Meadowcroft, an intermediate component 12 (46 in Figure 4) is provided between components 10 and 11. Thus, direct connection or bonding of the upper surface of a sealing cap and an opened end of a housing is precluded and, importantly,

the lateral dimensions of the module are *necessarily* increased while it appears that accurate alignment would be compromised. It is also noted and believed to be significant in Meadowcroft that the bond may be dimensionally unstable (column 4, lines 44 - 53) and clearances (see, for example, column 4, lines 33 - 43) which may complicate the alignment are required for the application of adhesive which is pulled into the clearance by capillary or "wicking" action (see column 5, lines 19 - 26). Therefore, only rough alignment is possible and even that rough alignment cannot be closely maintained due to dimensional instability of the adhesive and then only at the expense of increasing overall and lateral dimensions of the module. The intermediate part 12, 46 cannot be omitted consistent with the teachings of Meadowcroft and necessarily increases the lateral dimensions of the module beyond the dimensions of the cap. In Irie et al. the bonding surface is conical and does not allow for alignment while the bonding is essentially lateral and requires space in the lateral direction or dimension of the optical module. The laterally located mechanical connection of Kim et al. similarly does not permit alignment and requires lateral space and increase of lateral dimensions as may be best observed from Figure 3 thereof.

Therefore, it is clear that Meadowcroft does not anticipate any claim in the application and does not suggest the structure claimed or provide evidence of a level of ordinary skill in the art which would support a conclusion of obviousness of the claimed structure which provides minimum lateral dimensions (limited only by the size of the cap sealing the optical semiconductor element) as well as accurate alignment (especially using a bonding material, such as a thermosetting or ultraviolet setting material, that can be made to set while the parts are properly positioned

against each other). The Irie et al. and Kim et al. references do not supplement the teachings, suggestions or evidence of the level of ordinary skill in the art in regard to this explicitly claimed feature of the invention and have not been asserted to do so by the Examiner. Even as to Meadowcroft, the Examiner makes only a general assertion of the content thereof which does not directly address this feature of the invention or, for that matter, the holding of an optical element or lens in the housing, as recited in claims 1, 9 and 10. Therefore, it is respectfully submitted that the Examiner has not made a formally complete or substantively correct *prima facie* demonstration of either anticipation or obviousness of the subject matter of any claim demonstrating how the prior art answers the direct connection or bonding recitations of the claims which supports the meritorious functions not only accurate alignment but reduced lateral (and axial) dimensions of the module.

Accordingly, it is respectfully submitted that the stated grounds of rejection of the claims are clearly in error and untenable, particularly since a *prima facie* demonstration of anticipation or obviousness of any claim has not been and cannot be made based on the prior art currently applied by the Examiner. Therefore reconsideration and withdrawal of the same is respectfully requested.

Since all rejections, objections and requirements contained in the outstanding official action have been fully answered and shown to be in error and/or inapplicable to the present claims, it is respectfully submitted that reconsideration is now in order under the provisions of 37 C.F.R. §1.111(b) and such reconsideration is respectfully requested. Upon reconsideration, it is also respectfully submitted that this application is in condition for allowance and such action is therefore respectfully requested.

If an extension of time is required for this response to be considered as being timely filed, a conditional petition is hereby made for such extension of time. Please charge any deficiencies in fees and credit any overpayment of fees to Attorney's Deposit Account No. 50-2041.

Respectfully submitted,

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APPENDIX

Page 6, line 6+:

According to [anther] another aspect, there is provided an optical module wherein a plurality of optical modules constructed as described above are arrayed in juxtaposition[,] and covered with a single casing, and a clearance formed therebetween is sealed with resin. A typical example of such is an optical module of the tablet type in which semiconductor light emitting elements and semiconductor light receiving elements are formed as sets in a single unit.

Page 10, line 21+:

After its optimal position is obtained, it is irradiated with ultraviolet rays by an ultraviolet rays radiation apparatus. This ultraviolet rays radiation apparatus is provided with a metal halide lamp whose center wave-length is 365nm and output is 200W, and a target area is irradiated by use of 2-branched optical fiber bundles 32 whose emitting diameter is about 5mm. The luminance of the ultraviolet rays is 1500 to 2000mW/cm^2 per single optical fiber. In the actual irradiation, two ultraviolet rays radiation apparatuses were used and the target area was irradiated in four directions (arranged at a 90° angular pitch). The ultraviolet rays were irradiated for about 10 seconds in a state [that] as shown in Fig. 3, the resin housing 12 is horizontally placed, and the light emitting ends of the [2-banched] 2-branched optical fiber bundles 32 are set at positions horizontally spaced about 10mm from the resin housing 12. During the ultraviolet rays irradiation, the resin housing 12 and the optical semiconductor element 14 are held with the fixing stage and the element holding tool 30 so as to maintain the aligned state.

Claims:

1. (Amended) An optical module comprising:

an optical semiconductor element sealed with a cap having an upper surface formed with a window;

at least one optical part confronted with the window;

a housing holding the optical part therein[,] and having an opened end face <u>wherein an outer dimension of the opened end face of the housing is equal to or smaller than an outer dimension of the upper surface of the cap</u>; and

a connecting layer directly connecting the upper surface of the cap to the opened end face of the housing.

11. (Amended) The optical module according to claim 9, wherein a side surface of said cap of said optical semiconductor element [ad] <u>at</u> a side surface of said housing is at least partly covered with a casing[,] and a clearance therebetween is sealed with resin.

14. (Amended) The optical module according to claim 9, wherein a side surface of said cap of said optical semiconductor element [ad] <u>at</u> a side surface of said housing is at least partly covered with a casing[,] and a clearance therebetween is sealed with resin.